

WHAT IS AN EARTHQUAKE?

An earthquake is the sudden movement of the Earth that results from the release of strain in the Earth's crust. The outer layer of the Earth's crust is made up of 15 segments called [plates](#) which float on a molten inner layer. These irregularly shaped plates slide over, under and past each other constantly, slowly building energy. When the energy is released, sudden and sometimes violent vibrations rush through the surface of the Earth. The location at which the earthquakes energy originates is called the focus. The focus corresponds with the epicenter, which is the point on the Earth's surface directly above the focus.



WHERE DO EARTHQUAKES OCCUR?

90% of all earthquakes occur along plate boundaries. However, there are zones of weakness within the plates which experience earthquakes. These are the types of earthquakes we experience in Massachusetts.

HOW OFTEN DO EARTHQUAKES OCCUR?

Unfortunately, earthquakes are unpredictable. Geologists do say that some seismic zones in the U.S. experience moderate to major earthquakes every 50 - 70 years. Massachusetts is more likely to have an earthquake of great size every 200 to 300 years. The [last large earthquake](#) (a 6.25 on the Richter Scale) that occurred in the state was in 1755, 243 years ago. Massachusetts experiences approximately 8 minor earthquakes each year.

WHAT SHOULD I DO IF THERE IS AN EARTHQUAKE?

Before:

- Check for hazards in your home.
- Secure a water heater by strapping it to the wall studs and bolting it to the floor.
- Check for and repair pre-existing structural damage, i.e. cracked foundations. If the foundation is secure and fully intact, bolt the house to it.
- Store hazardous materials such as pesticides or flammable products in closed cabinets, which are close to the ground.
- Hang heavy items away from where people sit or sleep.
- Secure heavy furniture (bookcases, large appliances, etc.) to walls.
- Affix all cabinets with latches.
- Identify safe places
 - In a doorway
 - Under sturdy furniture
 - Against an inside wall

- Away from windows or bookcases.
- Locate safe places outdoors
 - Open areas away from buildings, trees, overpasses, bridges or power and electrical lines.
- Teach all household members how to turn off the main gas, electricity and water lines.
- Know which radio stations to listen to in an emergency.
- Have a [disaster supply kit](#) on hand. This should include:
 - Flashlight and extra batteries
 - Portable battery operated radio and extra batteries
 - First aid kit
 - Emergency food and water
 - Non-electric can opener
 - Essential medicines
 - Cash and credit cards
 - Sleeping bags or blankets
 - Sturdy shoes
- Develop a plan for reuniting after a disaster. For instance have an out of state family member who everyone will contact once they have gotten to safety.

During:

- Don't panic.
- Go to your preplanned safe area.
- Don't try to move indoors or outdoors, objects may fall on you.
- If you are in a car, stop the vehicle as soon as possible. Try to stop in a clear area away from bridges, trees, power lines, etc. Stay in the vehicle.

After:

- Be prepared for aftershocks, they may cause additional damage. Aftershocks can occur from hours to months after the initial earthquake.
- Help injured or trapped persons. Be especially aware of those who may not be able to help themselves such as small children, the elderly and those with disabilities.
- Listen to the radio for up to the minute information on the disaster.
- Stay out of damaged buildings until authorities say it is safe to return.
- Turn off gas, electricity and water if there is a problem.
- Don't use matches, candles or non-approved flashlights when returning into the home. these things may ignite gas leaks which you are unaware of.



The best way to protect yourself and your family is to be prepared!